

Direct Shipment Options

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Background

- RFETS is currently shipping PuO_2 to SRS
 - Calcined (950 °C, 2 hours)
 - Plutonium Storage and Packaging System (**PuSPS**)
 - 3013 cans/9975 package
- G.H. Friedman in DOE/IG-0554 (5/2002):
recommended ... that RFETS have a contingency plan in the event of a catastrophic failure of **PuSPS**.

Problem

- Develop ... a contingency plan to transport PuO_2 that is not 3013-compliant

Method

- Evaluate ...

- I. Type B Casks
- II. Shipper Site Issues
- III. Receiver Site Issues

I. Type B Casks



9975

Availability

- Commercially
- RFETS has full inventory



SAFKEG

- Limited production (30)
- Need 6 months for 100, then 100/month

I. Type B Casks - continued

9975

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Issues

CoC:	<ul style="list-style-type: none">• Authorized for “3013” compliance	<ul style="list-style-type: none">• Authorization pending, “3013” not required (400 °C, 1 hour)
H ₂ O/pkg:	<ul style="list-style-type: none">• 25 grams, 0.5 wt%	<ul style="list-style-type: none">• 25 grams, not by wt%
MNOP:	<ul style="list-style-type: none">• 900 psig	<ul style="list-style-type: none">• 101.5 psig

I. Type B Casks - continued

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Barriers

CoC: • Not authorized for non-3013 materials

PCV: • No provisions for non-3013 cans

Availability: • Available and fully stocked (RFETS)

• Uncertain schedule for CoC issuance

• Convenience can or food pack can within SARP

• Uncertain schedule for production quantities

II. Shipper Site Issues

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Barriers

- Portability:
- Within AB at RFETS
 - Requires 3013 compliance
 - Requires AB and handling changes
 - Requires material passivation at 400 °C (RFETS - done)

- Resources:
- Dedicated to RFETS shipments
 - Additional resources required to ship larger number of food pack cans
 - Additional resources required for SAFKEG AB changes and shipment

III. Receiver Site Issues

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Barriers

Storage: • Within AB for KAMS

- If convenience cans approved, could store in 235-F/other, pending study

- Not within AB for KAMS

- Could store in 235-F/other, pending study

- Storage space uncertain in 235-F •

Direct Shipment – Options

- EM HQ must authorize new funding for contingency plan for RFETS, and to enable future capability

9975

- SRS to develop schedule and funding profiles
- Funds to SRS for SARP revision

SAFKEG

- LANL to promptly address regulator issues with SARP (under review)
- EM to coordinate production schedule for NNSA
- Funds to SRS for interim storage and disposition of food pack cans

Audit Report on PuSPS at RFETS

DOE/IG-0554

“The Rocky Flats Field Office (RFFO) acknowledged that the [May 2002] target would be missed, citing startup delays and equipment failures as the primary cause. The audit disclosed that ... RFFO did not ensure that a contingency plan was prepared for use in the event that there was a delay or termination in PuSPS production.”

- **Gregory H. Friedman**
Inspector General
May 2002

Getters and Recombiners

... to enable Direct Shipment

9975

- SARP requires $< 5\%$ O_2 in PCV/SCV
- Inert with nitrogen atmosphere
- Control atmosphere in transit with:
 - H_2 Getters
 - H_2/O_2 Getter/Recombiners

Checklist

(for Receiver of a Direct Shipment)

1. Determine priority relative to other programmatic missions
2. Ensure adequate funding
3. Assign national security status of each shipment
4. Identify impacts on facilities
 - a. Administrative SNM mass limits
 - b. Vault storage limits
 - c. Shipper/receiver agreement requirements
 - d. Non-destructive analysis capabilities
 - e. Uranium evaluations
 - g. Comply with relevant NEPA/RCRA regulations
 - f. Ultimate disposition of incoming materials
 - 1) Indefinite storage
 - 2) Processing
 - a) Recover materials
 - b) Immobilize in glass
 - 3) Repackage and ship to another site

Checklist

(for Shipper of a Direct Shipment)

1. Develop procedures –
drafting the procedures, internal review, formal review, procedure walk-down for verification and validation, screen against building authorization bases, and final approval
... For SAFKEG – at least packaging, leak test, and contraband inspection procedures needed
2. Development of on-site Criticality Safety Operating Limits
3. Development/modification of Authorization Basis documents
... at least USQD's, AB revisions possible
4. Maintenance modification of the packaging area
5. Training of operations personnel
6. RFETS readiness reviews
7. External readiness review/DOE-AL, LANL, KCP audit, with corrective actions as necessary